

BEWARE: THE FARM CRISIS IS NOT OVER

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After lingering for years, the farm crisis seems to be receding. Net cash farm income and net farm income before inventory adjustment are currently forecast to establish nominal dollar records in 1987 (Table 1). Furthermore, these two income measures increased at compound annual rates of 11.6 and 18.7 percent respectively between 1984 and 1987, a sharp contrast with 1978-1984 growth rates of 2.7 and 1.8 percent. In addition, farm debt excluding farm households, which totalled \$199 billion on December 31, 1984, is currently forecast at \$158 billion for December 31, 1987. While some farmers, especially those burdened by heavy debts, continue to experience difficult times, current trends point toward a more optimistic future.

However, we believe that, far from suggesting optimism, causes of the current situation point to a continuation of the farm crisis. Most farmers, agricultural policy makers, and agricultural economists were caught off guard by the emergence of a farm crisis during the early 1980s. We suggest no one should be caught off guard by its continuance. Therefore, we address the economic causes of the current optimism, the difficult times they foretell, and a few of the implications.

Economic Causes of Financial Improvement

The interaction of three farm sector economic factors underpins the financial improvement of the farm sector. The first is declining expenses. Total expenses decreased from \$143 to an estimated \$115 billion between 1984 and 1986 (Table 1). Reasons include (1) declining prices for production inputs, (2) declining interest expense, and (3) declining use of inputs. The second factor is government price and income programs.

Direct government transfer payments to farmers plus net Commodity Credit Corporation (CCC) loans for grains increased from \$8 to \$20 billion between 1984 and 1986 before falling to \$14.5 billion in 1987 (Table 1). The third factor is profitability of the livestock sector. The ratio of livestock and livestock product prices to feed grain and hay prices, an indicator of livestock sector profitability, surged from 1.01 in 1984 to 1.74 during the first seven months of 1987 (Table 1). In contrast, the ratio averaged 1.10 over the period 1967-1986. While these three factors have exerted primary influence, it is important to note the generally good weather since 1984 and a recessionless nonfarm economy. The former is important because most of a farmer's profit comes from the last 10 - 20 percent of normal yields. The latter is important because 54 percent of farm family income came off the farm in 1986.

Financial Improvement and Current Optimism are Temporary

What does the future hold for the three farm sector economic causes of recent financial strength? Production expenses: large decreases in planted acreage during 1986 and 1987 have nearly balanced production and consumption. The need for additional reductions should, at least, be smaller in the future. In addition, during April 1987, prices for production inputs were slightly higher than during April 1986. On the other hand, interest expense should continue to decline as farm operators retire debt. In conclusion, farm expenses may continue to decline, but the pace will be substantially slower than between 1984 and 1987.

Government programs: because the Food Security Act of 1985 permits loan rates to decline more than target prices between 1987 and 1990 crop

years, the authorized declines in target prices do not necessarily imply smaller income payments to farmers. The declines, however, do imply lower net income for crop farmers unless supply and demand conditions warrant market prices in excess of target prices. The latter is considered unlikely by most experts. Since there is considerable discussion of freezing loan rates as a means of reducing federal budgetary outlays, loan rates are assumed to be frozen at 1987 levels. This also produces a conservative estimate of the impact of declining government program parameters on farm incomes. Applying the permitted decline in target prices for feed grains, wheat, rice, and cotton to actual or estimated 1987 program parameters (base acres, base yields, set-asides, participation rates) yields a projected \$2.5 billion decline in deficiency payments. Since target prices substantially exceed average cost of production, the decline will translate largely into lower net farm income.

The livestock sector: it is reasonable to assume that livestock producers will respond to historically high returns by increasing production, resulting in declining prices and profitability. To demonstrate the potential impact of a return to normal profit levels, the following analysis uses 1986 price levels, assumes that demand for livestock and livestock products increases by 0.55 percent for a one percent decline in prices, and assumes that the ratio of prices for livestock and livestock products to prices for feed grain and hay for 1986 (1.41) returns to its 1967-1986 average of 1.10. The composite price of livestock and livestock products will decline 24.7 percent from its 1986 value while quantity consumed, hence production, will increase 13.6 percent. The net result is a 14.4 percent decline in cash receipts. In dollar terms, the decline

equals \$10.4 billion since livestock sector cash receipts are estimated at \$72 billion for 1986. The only income support provided to the livestock sector is the dairy price support program. However, its support price can drop by as much as 14 percent by 1990. Thus, most of the projected decline in livestock cash receipts will translate into reduced profits.

To summarize, by the early 1990s net farm income could decline as much as \$10 - 15 billion from its 1986 level. Note, major changes in farm policy or significant production problems either in the U.S. or overseas could significantly alter the projected decline.

Impact of the Projected Farm Income Decline on Farm Financial Stress

The net present value (NPV) model, a commonly used asset valuation technique, prices an asset based on the discounted future net income the asset is expected to earn. Factors which affect an asset's value include the income earned by the asset the first year it is owned, expected rate of change over time in earned income, expected rate of inflation (deflation), real interest rate, and income and capital gains tax rates.

A characteristic of the NPV model is that a change in income earned by an asset during its initial year of ownership results in a proportionate change in the asset's value. The preceding analysis in essence estimates a reduction in initial year income because the reduction reflects a permanent adjustment to a new economic equilibrium caused by reduced government income supports for field crops and the return of the livestock sector to normal profit levels. For 1986, income earned by farm assets is currently estimated at \$31.9 billion. Therefore, a \$10 billion (about 30 percent) decline in farm income translates through the NPV model

to a 30 percent decline in farm asset values. Applying the projected decline to the December 31, 1986 value of \$692 billion for non-Commodity Credit Corporation (CCC), non-farm household assets yields a farm asset value of \$484 billion.

The projected decline in farm asset value has important implications for farm debt. Estimated debt consistent with a given asset level can be obtained by using a debt-asset ratio. The average debt-asset ratio during the 1960s and 1970s, 16.1 percent, is used in this analysis. It may be too high because recent declines in asset values may make farm investors more conservative borrowers than during the 1960s and 1970s.

Applying this ratio (16.1 percent) to the December 31, 1986 asset value of \$692 billion yields a farm debt estimate of \$112 billion, excluding household and CCC debt. USDA's preliminary estimate for December 31, 1987 is \$144 billion. Thus, additional debt liquidation is likely at current farm asset and income levels. The projected decline in farm debt becomes even larger when the debt-asset ratio is applied to the projected asset value of \$484 billion. The debt estimate becomes \$78 billion, a 46 percent decline from its December 31, 1987 level.

While the projected decline in farm asset and debt levels is large, three factors will moderate the decline and its impacts. First, production of the various livestock products will expand at differing rates. Historical behavior suggests it will be at least 1989 before normal profit levels are reached, and it may be as late as 1991. The second factor is that changes in asset values tend to lag changes in the income earned by assets. Thus, the projected decline in asset values (and farm debt) could take five to ten years to complete. The third consideration is that the

livestock sector will account for 60 to 80 percent of the projected decline in income. Yet, on December 31, 1985, land comprised 68 percent of non-household, non-CCC farm assets. Thus, the decline in farm assets will be moderated by the difference between the distribution of projected income decline and the distribution of farm assets among the various farm subsectors. However, the 1982 Census of Agriculture reveals that farms with more than 1000 acres account for 24 percent of livestock receipts, and, more broadly, farms with 260 or more acres earned 63 percent of livestock cash receipts. A reasonable assumption concerning current economic behavior among farm operators with livestock operations is that profits from the livestock operation(s) are being used to support land values. Thus, as livestock sector profits decline, ability of these operators to support land values will decline.

Summary, Conclusion and Implications

The farm crisis of the 1980s probably began in 1978-79. At that time, farm income stagnated. Since then, the crisis can be broken into two periods. One, from 1978 to 1983, was characterized by stagnant income but increasing asset values through 1981 and then a small decline through 1983. The second, from 1984 to 1986, was one of surging income but rapidly declining asset values. Thus, it is not too inaccurate to generally characterize the farm crisis as a debt--not income--problem. This characterization is reflected in the observation that, despite the huge surge in farm income since 1983, the proportion of U.S. farm operators under the most stress (negative cash flow and debt-asset ratios greater than 40%) has only declined from 12-13 percent to 10-11 percent.

The current optimism is characterized by record nominal income levels and at least stable asset values. However, when the causes of the current financial performance are examined, optimism is replaced by foreboding. Declining government income supports and increasing production of meat and livestock products in response to current profits foretell more hard times.

This analysis is too simplistic to forecast specific numbers, but it does suggest farm asset values could decline as much as 20 to 30 percent from current values, and farm debt could decline as much as 40-50 percent from current values. One implication is that current estimates for assistance to the Farm Credit System are too low. Another is that the next phase of the farm crisis could be more difficult than the recently-completed phase. The reason is that both asset value and income will decline, implying a much wider impact upon all types of farm operators, whatever their debt structure.

Given the potential for a continuing farm crisis, we believe farmers and policy makers should engage in contingency planning. Failure to consider the worst while hoping for the best is management by blinders. We hope our forecasts do not come true, for the pain will be immense. But, to ignore the potential for a continuing crisis is to lose valuable time in which to develop a sound course of action.

Table 1: Selected Indicators of the Financial Status of Production
Agriculture, United States, 1978-1987.

Year	Net Farm Income ^a	Net Cash Farm Income	Government Payments & Loans ^b	Production Expenses Including Farm Household	Ratio of Livestock & Livestock Product Prices to Feed Grain & Hay Prices
- - - - - Billion \$ - - - - -					
1978	23.3	33.1	3.1	103.2	1.23
1979	22.4	33.4	0.5	123.3	1.29
1980	22.4	34.2	1.7	133.1	1.09
1981	20.4	32.8	5.0	139.4	1.01
1982	24.9	38.1	12.6	140.0	1.21
1983	23.6	37.1	8.5	140.4	0.99
1984	26.0	38.9	7.6	142.7	1.01
1985	34.8	47.0	19.5	133.7	1.11
1986 ^c	41.0	53.0	20.1	122.0	1.41
1987 ^c	43.5	54.0	14.5	115.0	1.74 ^d

^a Net farm income before inventory adjustments.

^b Government payments and loans are the sum of direct government payments to farmers plus net Commodity Credit Corporation loans for the year.

^c Net farm income, net cash farm income, production expenses and government payments and loans are U.S. Department of Agriculture (USDA) preliminary estimates for 1986 and the midpoint of the forecasted range for 1987.

^d The price ratio is based on the average of prices reported by USDA for January through July.